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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,989	07/13/2001	Neil A. Cooper	ATI.0100820	3444

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EXAMINER

LAO, SUE X

ART UNIT PAPER NUMBER

2126

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/904,989	COOPER, NEIL A.	
	Examiner	Art Unit	
	S. Lao	2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-30 is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-14, 16, 18-22, 31, 35, 36 is/are rejected.
- 7) ☒ Claim(s) 8,9,15,17 and 32-34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) \emptyset | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Claims 1-36 are presented for examination.
2. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 4-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
Claim 4 recites "the hardware identifier" in line 1. There is insufficient antecedent basis for this limitation in the claim. For the purpose of art rejection, it is interpreted as "the device identifier", as best understood and as it appears to be.
Claims 5-7 recite " the hardware-specific driver portion " in line 1. There is insufficient antecedent basis for this limitation in the claim. For the purpose of art rejection, it is interpreted as "the particular device-specific driver portion", as best understood and as it appears to be.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1-4, 7, 10, 13, 14, 20, 21, 31, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al (U S Pat. 5,491,813).
As to claim 1, Bondy teaches a method comprising the steps of:

loading (bind) device-independent driver code (graphic packages 56, 57, 58), wherein the device-independent driver code forms a first portion of a display driver (code which interacts with applications 51, 52, 53, col. 4, lines 27-42);

receiving a device identifier associated with a particular device (Silicon Graghics, graPHIGS, col. 4, lines 55-58);

identifying a particular device-specific driver portion (device specific code 81, or 82) from a plurality of driver portions associated with the device identifier (device specific code 81, 82, ..., 92, col. 4, lines 27-42); and

loading (bind) the particular device-specific driver portion (device specific code), wherein the device-specific driver portion forms a second portion of the display driver (code which interact with display adapter A, B, ..., E, fig. 1, 2). See col. 2, lines 11-53; col. 4, line 18 – col.5, line 45; col. 9, line 41 – col. 10, line 16.

While Bondy does not explicitly teach that the device-independent driver code and the particular device-specific driver portion are loaded into kernel mode memory, it would have been an obvious choice in view of the fact that device drivers are typically into kernel / operating system memory.

As to claim 2, Bondy teaches requesting a device identifier (Silicon Graghics, graPHIGS) to identify the particular device (graphic devices), after the step of loading device-independent driver code into kernel mode memory and before the step of receiving the device identifier (col. 4, lines 55-58).

As to claims 3, 4, 20, 21, 35, Bondy teaches the device identifier includes an application-specific integrated circuit identifier / a graphics chip identifier (Silicon Graghics Inc., GL, IBM graPHIGS, col. 4, lines 55-58).

As to claim 7, Bondy teaches calling a function to load a block of executable code in kernel mode memory (dynamic binding, col. 5, line 62 – col. 6, line 6).

As to claims 10, 14, Bondy teaches the device-independent driver code includes two-dimensional graphics functions (2-D model 56).

As to claim 13, note discussion of claim 1, and note the equivalence of device-independent functions / device-independent driver code. Bondy further teaches device-independent functions are capable of supporting a plurality of different display devices

(package 56 supports devices A, B, C, D represented by the respective adapters); a plurality of device-specific driver portions (device specific code 81, 82, ..., 92, col. 4, lines 27-42), each only capable of supporting a portion of the plurality of different display devices (device specific code 81, 82, 83, 84 support devices A, B, C, D respectively). Note claim 1 for second function to load and for kernel mode memory.

Regarding a first function to request for a device identifier, wherein the device identifier is capable of identifying a particular display device of the plurality of different display devices, Bondy teaches device identifier (Silicon Graphics Inc., GL, IBM graPHIGS, col. 4, lines 55-58) capable of identifying a particular display device (respective graphic adapters). Bondy uses such device identifiers to determine the corresponding device-specific driver code (81, 82, ..., 92) to be bond/loaded (col. 3, lines 34-54). Therefore, including a requesting sub-step to obtain/determine such device identifiers would have been obvious.

As to claim 31, it is a program product claim of claim 13, thus note claim 13 for discussion.

6. Claims 5, 6, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al as applied to claims 1, 13 in view of Keller et al (U S Pat. 5,752,032).

As to claims 5, 6, 18, 19, Keller teaches device driver architecture, wherein a hardware-specific driver portion includes direct draw functions (DD 66), and direct 3D functions (68 including D3D). See col. 7, lines 46-60.

Therefore, it would have been obvious to include direct draw functions and direct 3D functions into Bondy. One of ordinary skill in the art would have been motivated to do so because this would have provided virtualized device context/state management, enhancing context switching during operations (col. 3, lines 37-51).

7. Claims 11, 12, 22, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al as applied to claims 1, 13, 31 in view of Schoening et al (U S Pat. 6,226,788).

As to claims 11, 12, 22, 36, Schoening teaches device driver management, including locating a name associated with the device-specific driver portion in a table using the device identifier (device type value), comparing versions associated with functions of the device-specific driver portion to versions expected (device mapping table) through an application program interface (device mapper operations). See col. 16, line 50 – col. 17, line 59. Given the teaching of Schoening, one of ordinary skill in the art would have been motivated to include locating and comparing into Bondy because this would have allowed new devices to be added without requiring revision of the applications (col. 3, lines 24-33).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al as applied to claim 13 in view of Shirakabe et al (U S Pat. 5,136,709).

As to claim 16, Shirakabe teaches loading device drivers, including determining addresses (address) associated with functions of the particular device-specific driver portion (col. 8, lines 27-53). Given the teaching of Shirakabe, one of ordinary skill in the art would have been motivated to include determining addresses into Bondy because this would have provided independent configuration of the driver and the kernel (col. 10, lines 20-29).

9. Claims 23-30 are allowed.

10. Claims 8, 9, 15, 17, 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A

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voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (703) 305 9678. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

September 30, 2004

A handwritten signature in cursive script, appearing to read "Sue Lao".

SUE LAO
PRIMARY EXAMINER